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Mobile application as contribution to attendees' experience of trade events

Case: DesignCon 2015

Master's Thesis

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Abstract of master's thesis

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Abstract

The objective of the study is to identify the extent to which a trade event's mobile application play a role in attendees' experience of the event. The case of the study is DesignCon 2015, a trade fair of the high-speed communications and semiconductor industry, which takes place annually in Silicon Valley. The study employs theories of corporate communications and marketing to answer the main research question: "Did the DesignCon app have impacts on attendees' experience of the event? If yes, to what extent?"

The data of this qualitative single case study comes from three sources: a survey of 92 attendees at the event, observation at the event, and content analysis of the app structure and what is posted on the app before, during, and after the event. The theoretical framework is a two-layer model, the event experience is broken down into pre-, during, and post-event, each has their own criteria. On the other hand, a personal event experience is constructed by a value exchanging process between one and the organiser, as well as interaction between one and the other attendees.

Attendees at DesignCon 2015 is a mix of exhibitors and visitors, with slightly different objectives and expectations, but when it comes to app awareness, a majority of attendees surveyed have knowledge about the app, and the adoption rate is about 50%. Most people who use the app do agree that it plays a role in their experience at the event. Before the event, the app has the ability to fulfill all the needs of attendees regarding pre-event activities, which are imagining, searching, planning and budgeting. During the event, it also plays a role in every aspect of the experience, including sensory, emotional, functional, social, information and novelty. However, it did not take much of a role in post-event experience.

Keywords stakeholder communication, experience marketing, experiential consumption, trade fair, digital communication

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1. Introduction

In this day and age, a mobile phone is far from just a single-purpose communication device that allows users to talk to each other on the go. It has evolved to become a dynmic tool, much like a digital personal assistant, that supports users in a variety of tasks such as playing games, listening to music, connecting with each other through social networks, navigating, searching for information, and much more.

As mobile phones increase the availibity, frequency and speed of communications (Scharl, Dickinger & Murphy, 2005), businesses are constantly looking for effective ways to incorporate brand awareness and sales into mobile phone usage. Mobile marketing is a large field that includes advertising via SMS and MMS, advertising on mobile applications (here after also referred to as "apps"), and even fostering relationships with customers through a native app for the brand; for example, clothing brands have their own apps for shopping, and mobile carriers have their own apps for promotions and account information.

At the same time, traditional, face-to-face marketing still has to be carried out. Among them are trade fairs, where sellers and buyers meet in person to discuss about products and sales. As trade fairs are platforms to facilitate business connections and transactions, from the trade fair organisers' perspective, the success of a trade fair depend not only on the exhibitors but also equally on the visitors.

There is a lack of research on how trade fair organisers communicate with potential and existing customers, namely exhibitors and visitors. The majority of research on trade fair marketing and communication has been on the exhibitors' perspective, how exhibitors can maximise benefit from their participation in the fair, with monetary value of transaction being the main measurement of success.

Trade fairs provide a common destination for industry sellers and buyers to meet and exchange opportunities, therefore, trade fair organisers in fact can be seen as providers of a service (Munuera, Ruiz 1999). As any other services, it needs communication and marketing to reach potential customers.

This thesis is interested in seeing how the two seemingly opposite types of marketing – face-to-face and digital/mobile – meet; specifically how mobile apps play a role in an offline event like trade fair. It will look at the role of mobile app in trade fair through the lens of communication marketing, in which theories of communication and experience marketing are the main pillars. This study aims to fill the gap in literature regarding communication from trade fair organisers' perspective, specialising in how mobile applications are utilised by organisers, as well as what effects the apps have on attendees' experience.

Mobile marketing at a glance

Mobile marketing evolves as mobile phone technology and popularity evolve. It is defined as "the use of wireless media as an integrated content delivery and direct-response vehicle within a cross-media marketing communications program" (MMA – Mobile Marketing Association 2006). However, in 2004, the term mobile marketing was almost used synonymously with SMS and MMS marketing, as understood in Scharl, Dickinger and Murphy's (2005) study, in which the authors discover success factors for SMS marketing include attractive, relatable and personalised content, in combination with interesting and convenient "call to action".

In 2010, mobile marketing practices according to Shankar et. al. include mobile-friendly websites, mobile emailing and messaging, mobile advertising, mobile couponing, mobile customer service, and mobile social network management. However, the channels to carry out these practices are still either website or SMS/MMS; and most practices do not offer a distinction between mobile marketing and digital marketing in general.

However, the introduction of the first Apple's iPhone in 2007 changed the playground by inspiring thousands of applications being developed for iPhone users. Apple's App Store is so rich in content – "whatever you want to do, there is an app for it" (Topology Research Institute: TRI, 2010) – that it became a major added value for the iPhone. Other mobile operating systems soon followed suit with their own app markets. The first quarter of 2017 has seen a record number of not only app downloads but also revenue, reaching over 15 billion US dollars worldwide with iOS and Android app purchase alone, not including revenue from in-app purchases and advertising (Perez 2017). Applications have become the quintessential of smartphones and opened a new channel of communication between brands and consumers.

A technical background: A mobile application is software application that runs on a mobile device (smart phone, tablet computer, etc.) which has an operating system that supports standalone software (Mobile Application (Mobile App)). They are available through application distribution platforms, which are typically operated by the owner of the mobile operating system, such as the Apple App Store, Google Play, Windows Phone Apps and BlackBerry App World (Siegler, 2008). Mobile apps can come preloaded on the mobile device as well as can be downloaded by users from mobile App stores or the Internet.

In a large-scale study (Böhmer et. al. 2011) it was revealed that mobile device users spend almost an hour a day using apps, and while the average time spent on each app is 72 seconds, with the actual time differs extensively between app categories. While applications (apps) for mobile devices have become extremely important in the recent years with the rising popularity of smart phones, there has been very little research on the usage and effects of mobile applications and how they are used in marketing.

Trade fair

Trade fairs and exhibitions are opportunities for visitors to examine products and services up close, and enjoy entertainment at the event, as well as to see the latest innovations and observe market trends (Kaniewska-Sẹba et al., as cited in Rittichainuwat & Mair 2012). Many scholars (Getz 2008), Kozak 2005, Pearce 2007) also agree that exhibitions are effective distribution channels, enabling exhibitors and visitors to interact through activities and also enhancing the local community's public image. Attendance at an exhibition allows visitors to: gather information on new products, view particular products, observe companies, and make contacts (Rosson & Serinhaus 1995); examine products and compare brands (Tanner et al., 2001); reduce cognitive dissonance after making a purchase (Godar & O'Connor, 2001); and collect information for future purchases (Munuera & Ruiz, 1999). Moreover, exhibitions offer a personal element: face to face marketing (in which buyers and consumers can speak in person with vendors); and experiential marketing (where customers can involve all their senses, to touch, smell, and taste products, as well as to speak and listen to exhibitors to determine how a product might match their needs) (McAllan, Criscione & Rees 2008).

There are several different terms describing trade events, including trade show, trade fair, exhibition, and expo/exposition. It is a surprise to see there does not exist a universal understanding of these popular terms among academics. Sanders (2013) distinguishes trade show and trade fair in terms of their target audience; the former as a specific industry business-to-business (B2B) event for showcasing and demonstrating new products and services, and the latter a business-to-client/customer (B2C) event for showcasing as well as selling and marketing. Exhibition, according to Sanders, is a B2C event focusing on showcasing, and expo focuses on business networking, especially export opportunities. Sanders believed in practice there are very little differences, if any at all, between the above terms. One term can also be more popular than the other due to merely linguistic reason; for example, the word "trade show" is more popular in the US, where as "trade fair" is more used in Europe. Many people use them interchangeably and many events combine more than one type together.

Rittichainuwat and Mair (2012), on the other hand, consider "exhibition" a broader term than "trade show". Exhibitions can be subdivided into three categories, of which a trade show is only one. The other two categories are "consumer exhibitions", and "trade and consumer exhibitions". Trade shows are explained as open only to invited customers and suppliers, as well as to the media; consumer exhibitions or consumer shows are open to the public to provide information and sell products directly to consumers; and finally, trade and consumer exhibitions or trade and consumer shows are a hybrid of the two above categories: it is open to business visitors during the first days and to the public during the final days of the exhibition. This distinction, however, only deals with visitor profile of trade events and does not acknowledge other activities such as conference or training workshop. It is therefore will not be used as definition in this paper.

In contrast to Rittichainuwat and Mair, Banting & Blenkhorn (1974) claim "trade show" is an umbrella term for exposition, fair, exhibition and mart, and define it as:

> *"a facilitating marketing event in the form of an exposition, fair, exhibition or mart; which takes place at periodically recurring intervals, ranging from quarterly to triennially; having pre-established hours of operation during a period lasting between one day and several weeks; whose primary objective is to disseminate information about, and display the goods and services of competing and complementary sellers who have rented specifically allocated and demarcated areas or "booths", clustered within a particular building(s), or bounded grounds; and whose audience is a selected concentration of customers, potential buyers, decision influencers, and middlemen."*

In this paper, the term "trade fair" or "trade event" will be used interchangeably, with meaning consists of what is stated in Banting and Blenkhorn's definition, plus other functions of an industry-specific event such as conferences and training workshops.

DesignCon 2015

DesignCon is a premier trade event of the high-speed communications and semiconductor industry, which takes place annually in Silicon Valley. It is the largest gathering of chip, board and systems designers in the United States, combining educational conferences and technology exhibition. The event programs include technical paper sessions, tutorials, industry panels, product demos and exhibits. On their website, the event claims to be the place for chip, board and systems designers, developer and manufacturers to grow their expertise, learn about the latest design technologies and tools, and network with fellow engineers and experts.

DesignCon 2015 marked the 20th year anniversary of DesignCon, taking place in Santa Clara Convention Center, California for four full days from 27th to 30th January. While the conference sessions took place on all four days, the exhibition only happened in the second and the third day. There are five types of passes to attend the event, One-Day Pass, Two-Day Pass, and All-Access Pass are paid passes with different levels of accessibility; Expo Pass, giving access to the exhibition, is free; and Alumni All Access Pass can only be obtained with invitation.

A typical day with the conference sessions lasted from 8:30 AM to 6:00 PM, with a two-hour lunch break. The day was broken down into different time sections when several sessions/activities took place at the same time in different locations. The exhibition (Expo) was from 12:30 PM to 6:00 PM on the 28th and 29th. Socialising opportunities include a sponsored lunch and end-of-day reception on the first day, and Expo Happy Hour on the second and third day.

2. Research problem and research questions

If every step of the trade fair experience is digitalised in a streamline manner, organisers will have the opportunity to capture meaningful information about attendees beyond simply knowing that a prospect is going to attend the event (Certain offers attendee engagement and interest intelligence, 2014). The fact that event mobile applications have been increasingly popular among technology trade fairs signify the perceived benefit of mobile apps outweigh the cost of developing and implementing them.

With the ever increasing importance of smartphones in particular and smart mobile devices in general, it is crucial for event organisers to understand the impacts of these new means of communication on attendees' experience of the event. It is then in their best interest to create a competitive advantage by utilising this channel to improve the event experience.

Due to the vast variety of trade events, as well as the differences in natures of industries, trade associations, event target audience and event expectations, a case study is the best option in seeking a deep understanding of this specific phenomenon. With the case of DesignCon 2015, this thesis sets out to answer the following two research questions:

RQ1: Who were DesignCon 2015 attendees and what did they expect from attending the event?

RQ2: Did the DesignCon app have impacts on attendees' experience of the event? If yes, to what extent?

3. Literature review

3.1. Integrated marketing communication

Marketing and corporate communication, each claims their own academic discipline; however, in reality they often cross paths. Kotler and Armstrong define marketing as "the process by which companies create value for customers and build strong customer relationships in order to capture value from customers in return". They point out that sales and advertising are just the tip of the marketing iceberg, which is about "building profitable, value-laden exchange relationships with customers". This relationship-building function of marketing clearly shows that there is communication dimension within marketing. Because of its meaning-making and organisation functions, communication plays an essential role in building relationships. In a conference on relationship marketing, Zinkhan et. al. (1996) even go as far as saying communication and marketing are complementary metaphors.

Duncan and Moriarty (1998) realise the need for a communication-based marketing model for two reasons. Firstly, a company sends out messages about its brand in every single action that it takes or does not take, not only in its advertising campaigns. Therefore, recognising the hidden communication outside the marketing mix is essential in creating a homogenous image of the company. Secondly, there are much more to corporate constituencies than just customers. Other stakeholders of a company can include but are not limited to investors, suppliers, employees, competitors, the media, the surrounding community, and government agencies. Although customers are often the primary target of most marketing efforts, some can argue that maintaining and enhancing the relationships with other stakeholders like employees and shareholders is not of any lesser importance. Furthermore, since stakeholders can often overlap: employees can also be customers, government agencies are also part of the community, companies need a communication approach that takes all parties into account.

Similarly, in his book about integrated marketing communication (IMC), Tony Yeshin advocate for the integration of marketing and communication also for the consistency of message delivery and corporate cohesion. Moreover, he add the effect of better client relationships and better interaction due to a holistic approach, and more motivation and participation from the side of the company due to a team effort (p. 75 – 76).

In fact, the definition of corporate communication does not oppose to this approach. By definition, corporate communication is the management function that oversees the communication work in different specialist disciplines, "with the overall purpose of establishing and maintaining favourable reputations with stakeholder groups upon which the organization is dependent" (Cornelissen 2011, p. 5). Therefore, it can be said that corporate communication is an umbrella discipline of which marketing is a part.

3.2. Facilitating stakeholder conversation as part of the corporate communication effort

Recently, significant attention has been drawn to the relations between organisations and their stakeholders. Academics have suggested that corporations should take into account the interest of their stakeholders, for both ethical and economic reasons (Crane & Livesey 2003). Stakeholder communication, as a result, has been a focal point in many academic studies, especially with the growth of interest in corporate social responsibility research. However, stakeholders are usually regarded as targets rather than partners in the communication process (Gregory 2007). This part of the literature review therefore will explore this aspect of stakeholder communication (stakeholder as partner), and connect with marketing theory of brand community to present the importance of facilitating communication *among* stakeholders as part of the corporate communication effort, instead of only communication *with* stakeholders.

The term stakeholders refer to groups of constituents who have a "legitimate claim on the firm", who supply the firm with critical resources (Hill & jones 1992). Stakeholder and stakeholder communication theories originate from the realisation that a firm is not a "black box" that merely processes inputs into outputs to serve the benefit of shareholders, but it "exists at the nexus of a series of interdependent relationships with groups that can affect or are affected by the firm" (Freeman 1984, as cited by Crane & Livesey 2003). Each of these different groups will clearly has their own set of interests, demands and objectives, and the question for the firm in this situation is how to manage these interdependencies and balance the interests of these actors, while at the same time continue to create profit for its shareholders.

Several scholars have developed models to help firms with stakeholder management. For example, Hill and Jones (1992) take the perspective of agency theory but modify it by acknowledge the inefficiency of markets and power differentials in order to explain certain strategic behaviours pursued by managers with respect to stakeholders. Similarly, Frooman (1999) utilises resource dependence theory to identify four types of resource relationships between a firm and its stakeholders – stakeholder power, high interdependence, low interdependence and form power. Regardless of the approaches, scholars seem to agree on a consensus that understanding the power and the influence of different stakeholders is of paramount importance for companies in today's business.

In terms of stakeholder communication, there has witnessed a gradual change in the way academics look at this topic. Early communication theory treats stakeholders as "receivers", to which firms only send particular messages (Axley 1985; Redding and Tompkins 1988). Not only it is one-way communication, it is the process of transmitting information as a static commodity, rather than a dynamic meaning-making process through negotiation. Later models of communication start to pay more attention to the effects of the messages, and suggest a system in which feedbacks from the receivers are recorded and taken into account (Berko, Wolvin, and Ray 1997; Ruben and Stewart, 1998 – as cited in Crane & Livesey 2003). The idea of stakeholder dialogue since then has been stressed repeatedly by academics, that stakeholder communication, is as much about understanding each other and building relationships as it is about exchanging information (Kaptein & Van Tulder 2003).

Although there is a significant progress in the way academics consider stakeholder communication within corporate communication, from one way communication to conversation-oriented and relationship building, the concept is still very much understood as an arena of communication in which the firm is one of the actors. In other words, no matter whether it is a one-way or two-way communication process, there still seems to be an assumption that corporate communication regarding stakeholders should directly *involves* the corporation either in the sending or receiving end of the messages. The facilitation of communication *among* stakeholders, on the other hand, is surprisingly neglected and not seen as part of a firm's corporate communication responsibility.

Even with works regarding stakeholder engagement (Greenwood 2007; Noland & Phillips 2010) this specific dimension of communication cannot be found, as stakeholder engagement theorists often focus more on the management, especially moral, aspect of engagement rather than communication. Likewise, research papers on stakeholder communication in the Internet era largely neglect this facilitation of communication among stakeholders themselves; these works for the most part still concern only with the firm being the sender of the messages (Cooper 2003; Adams & Frost 2006). There is, however, the work by de Bussy et al. (2001) that notices a shift in stakeholder communication from a pre-Internet model of the organisation being at the centre of all communication to a post-Internet one where the organisation is only part of the network. They realise the ability of stakeholders to use the Internet to communicate with each other as well as, and even independently of, the organisation. The article provides examples of organisations who take it upon themselves to facilitate the communication not only between itself and stakeholders, but also between stakeholders; for example, customers talking to customers, customers talking to employees, customers talking to government, employees talking to employees, etc. "This may be with the knowledge, approval and support of the organisation, or it may not" (De Bussy et al. 2001, p. 141). De Bussy et al.'s (2001) work is one of the very few studies within corporate communication discipline that specifically calls out that sometimes it is in organisation's benefit to actively facilitate the communication between its stakeholders, even though it might not directly takes part in the conversation.

Figure 1: How stakeholder communication has evolved on the Internet

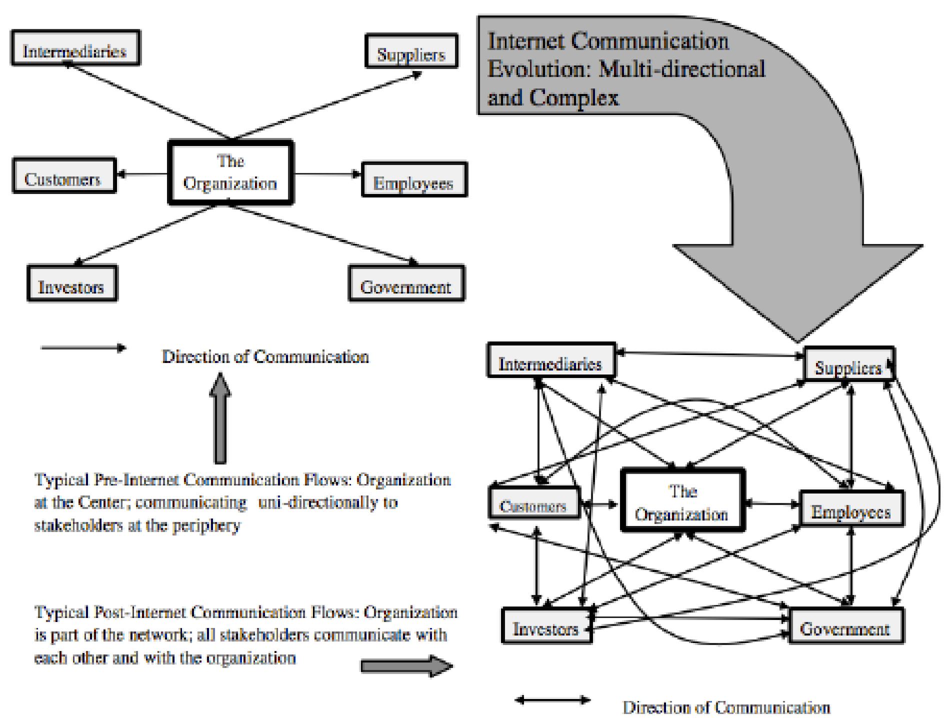


Figure 1. De Bussy et al.'s (2001) model of stakeholder communication in the Internet era.

Two stakeholder theories that support the notion that there ought to be more to stakeholder communication than just messages sending to and from the organisation, is the network theory of stakeholders by Rowley (1997), and the differentiated stakeholder perspective by Crane (1998). Under the network model, stakeholders are considered not only related to firms, but in many ways they also have relationship with each other, and with their own stakeholders. Rowley (1997) recognises that the organisation is more than simply at the central point of its stakeholder network, therefore, "treating its position as a variable in its complex social system provides one with an opportunity to understand more fully how patterns of stakeholder interactions impact the organization" (p. 892). On the other hand, the differentiated stakeholder theory acknowledges the "intra-stakeholder differences" (Crane 1998). While it is easy to assume each stakeholder group has their own issues and interests, in reality, each group itself is unlikely to be homogeneous. Furthermore, not even all stakeholders have direct relationships with the organisation, but as part of the larger network, they can still influence the organisation in some way (Crane 1998). These theories of relationships between and within stakeholder groups support the notion that stakeholder communication is much more complex than just dialogues by and with the organisation, thus, the need for intra-stakeholder communication.

Although facilitating stakeholder communication has not really been explored by corporate communication or public relations scholars, there is an aspect of it that is no stranger to marketing researchers and practitioners, that is brand community. Taking the spirit of the integrated marketing communication approach, let us examine through brand community research how actively facilitating the conversation among stakeholders, in this case among customers, benefits the organisation, without it necessarily taking part in the conversation.

A brand community is defined by Muniz and O'Guinn (2001, p. 412) as "a specialised, non-geographically bound community, based on a structured set of social relationships among admirers of a brand". They can be formed naturally by brand enthusiasts, or directly by marketers, but their development is contributed as much by consumers by marketers (Firat and Venkatesh 1995) "in a complex and fascinating dance of social construction" (Muniz & O'Guinn 2001, p. 428).

In an eight-year long study of Jeep and Harley Davidson brand communities, McAlexander and colleagues (2002) discover several ways that marketers can contribute to the process of community building, such as by creating the context in which the community interaction occurs (e.g. establishing online platforms, holding events), and establishing shared rituals and traditions as tools for interaction and bonding (e.g. organising exhibits, providing promotional materials, setting up workshops to assist with how to use the products).

On the other hand, Cova and Pace (2006) discover that brand community and interaction take a slightly different form with convenience products. With the case of Nutella in Italy, the authors notice that the community is not based on interaction between peers, but more on personal self-exhibition in front of other consumers through rituals linked to the brand. In this case, it is suggested that beside acknowledging the sub-culture and establishing a (virtual) space suitable for the sub-culture to manifest, the company should step backward and play a non-intrusive role so that the spotlight is on the brand's fans, instead of it manufactureres (Cova & Pace 2006).

Although brand communities cannot be forced by marketers, and having strong brand communities does not always mean every decision of the organisation regarding the brand would be welcome by consumers (Muniz & O'Guinn 2001), researchers all agree on the extremely powerful value-creating potential of brand communities, especially in brand loyalty, commitment and publicity (Schau et al. 2009; Jang et al. 2008; McAlexander et al. 2002, Muniz & O'Guinn 2001).

In summary, borrowing theory of brand community from marketing, as well as with the support of stakeholder theories in management and corporate communication, it can be seen that even though there is a lack of attention paid to facilitating communication among stakeholders, this idea had long been practiced in the real world, and it holds great potentials to be developed further by academics. This thesis will utilise these supporting theories to analyse event mobile applications under the light of stakeholder communication.

3.3. Trade fair's communication and marketing

The term 'event marketing' is used to describe a variety of activities, including the "marketing of events and marketing with events" (Cornwell and Maignan, 1998). This research focuses on event marketing of the former meaning, which is the marketing of event from event organisers' perspective.

Trade fairs belong to the category of trade association events, which also include events like meetings, conferences, and expositions. Unlike corporations, trade associations and professional societies are "volunteer" organisations, in the sense that although organisation staff is likely salaried, they are selected by elected or appointed volunteer leaders of the industry. Hoyle (2002, p. 102) point out that understanding the nature and dynamic of the association is crucial in marketing association events, because it determines the goals and priorities of the organisation. Unlike events for or by a single company, trade fairs are held by a board elected by members, for the members of that particular trade or industry. It therefore has to balance the interests of each member company, of whom many are direct or indirect competitors, and of the trade association as a whole.

Since most trade fair organisers rely on high number of attendees (meaning both visitors and exhibitors – as one attracts the other, and more often than not both contribute to the income generation of trade fair owners), tradefair marketing naturally involves attendee acquisition. Regarding this, Berné and García-Uceda (2007) suggests trade fair organisers to be selective in their communication target audience since a relevant part of non-attendees were people who were not interested in trade fairs in the first place. On the other hand, for many firms the decision to go to a trade fair is a "straight rebuy": they go every year without additional evaluation being made about the fair (Kijewski & Young, 1993). Therefore, instead of increasing general communication budget for better attendance rate, organisers should focus on identifying the composition of attendees and non-attendees to tailor communication messages accordingly.

This is exactly where digital communication comes into place. In fact, digital media have been said to enhance attendee engagement at trade fairs, drawing them in and encourage them to spend more time at the event (Hall, 2011). In a survey of 480 exhibition and sponsorship decision-makers, including independent show producers and association event executives, a majority of respondents (69%) anticipate revenues generated from digital aspects of exhibitions to increase. In fact, 83% see the value of digitalisation on attendee engagement and 72% of all respondents forecast an increase in their digital spend. However, while there are several tactics to digital communication, the most commonly used is still email (Digital Playbook, 2013).

In the context of the trade fair industry, an event app for mobile devices on top of a website is becoming increasingly popular, especially among fairs focusing on technology. Mobile apps are in fact among the top tactics used for revenue generation among 25% of B2B organisers and 22% of B2C organisers (Digital Playbook, 2013). Mobile apps do not only provide timely updated information about the event, they also hold great potential for interaction between stakeholders and especially ease the networking process, which is one of the main objectives of visitors when attending a trade fair.

3.4. Attendees' motivations for attending trade fairs

3.4.1. Exhibitors' motivation

Trade fairs act as a marketing channel for companies. They are unique in their nature compared to other marketing tools such as advertising, promotion, and so forth in that they offer direct face-to-face contact between buyer and seller, hence allow fully interactive two-way communication. The physical aspect of trade fairs also allows display and demonstration that might be difficult otherwise. In addition, they differ from sales calls or even more modern methods of communication such as social media in the way that the communication is mostly initiated by the buyer instead of the seller.

Munuera and Ruiz (1999) discovers in their study that around 85% of small and medium companies send fewer than tree people to visit a trade fair. A majority of the company visitors did not consider attendance of fairs as crucial for purchasing the products on display, but rather attending trade fairs to discover new lines of products, network, or getting new ideas. From the management's perspective, key factors to consider whether to exhibit at a given fair do not only include cost and staffing capabilities but also attendance/lead performance, marketing synergy and the environment of that particular trade fair (Kijewski & Young 1993).

In another study, Munuera et al. (1993) find out that exhibitors' objectives are to contact potential clients, to enhance the company image, to launch new products, and to offer services to the market. Shipley and Wong (1993) concluded that exhibitors assign greater importance to long-term relationships and qualitative objectives relating to customer contacting, customer interaction, image building, competitiveness building, and intelligence collection.

3.4.2. Visitors' motivation

To visitors, trade fairs allow the opportunity to make quick and effective comparison between different products and services thanks to the large number of exhibitors and, as for most trade fairs, the industry-specific nature. Dudley (1990) reports that visitors attend fairs to assess new products and developments, to obtain product and technical information, to meet and compare potential suppliers, and to gain new ideas. Similarly, Morris (1988) discovers buyers' five main objectives when attending a trade fair are to see new products and developments, to gain information about the industry, to see a particular product or company, to attend training sessions, and to obtain technical information about products.

Regarding the factors of firm's size and attendee's position within firm, Bello (1992) reports that: attendees involvement in purchase decisions is positively related to their position in the firm's authority structure and negatively related to the firm's size; transaction information (price, terms of sale, etc.) is important for attendees in upper authority positions whereas both transaction and technical information (technology, etc.) are important for attendees from small firms; and attendees in lower authority positions tend to use nonpersonal sources, attendees from small firms use person in-exhibit sources, and attendees from large companies use personal out-of-exhibit sources of information.

3.5. The experiential aspect of consumption

3.5.1. What is consumer experience?

In the last few decades, researchers have come to a consensus that there is more to the customers' decision-making mechanism than rational and logical thinking. Thus there is the shift from seeing consumers as computer-like decision makers to "flesh-and-blood" human beings who seek pleasure in their consumption, and who respond emotionally to products and services (Holbrook 2000, Holbrook & Hirschman 1982, Hirschman & Holbrook 1982, Grove & Fisk 1997, Alderson 1997, etc.). Since the middle of the last century, Wroe Alderson (1957) have emphasised the importance of the consumption experience in "Marketing Behavior and Executive Action". Lawrence Abbott (1955) also stress the service aspect performed by products as the basis for customer value.

In fact, the 1950s marked a substantial discussion concerning the symbolic aspects of product, as Levy (1959) noted, "people buy products not only for what they can *do*, but also for what they *mean*" (p. 118). However, the idea that there is value in the consumption experience is not a concept that was discovered in the 50s. In his book "Pursuing Happiness: American Consumers in the Twentieth Century", Lebergott (1993) traces this view even back to classic economic texts of Adam Smith, Alfred Marshall and John Maynard Keynes, highlighting that consumption, instead of output, is the aim of economic activity (p. 3).

Even though there is an extensive literature on experience marketing, the body of work is still rather fragmented (Tynan & McKechnie 2009). Holbrook (2000) roughly divides the different research on consumption experience into three paths: empirical studies of the emotional aspects of consumption (Havlena & Holbrook 1986, Richins 1997, Westbook & Oliver 1991); measures of consumption experience (Lacher & Mizerski 1994, Mano & Oliver 1993); and overviews from sympathetic conceptual orientations (Holbrook 1987, 1995). In his series of book reviews, Holbrook (2000, 2006, 2007a, b and c) also points out the discrepancy in the academics' and the practitioners' approach to consumption experience, criticising that although the current best selling practitioner books on experience marketing are rich in examples and step-by-step guide, they only offer a shallow understanding of the topic due to the lack of conceptual foundation and the reluctance to paint the whole picture.

The voluminous amount of studies on consumption experience, from both academics and practitioners, also has not produced or agreed on a common ground for the concept. While it is often referred to as consumption experience, Hirschman and Holbrook (1982) call it hedonic consumption, Poulson and Kale (2004) call it commercial experience, and in other bodies of work it is discussed as the emotional aspect of consumption (Havlena & Holbrook 1986, Richins 1997). In terms of definition, Poulson and Kale (2004) realise that up to 2004 there had been no official definition of the commercial experience. Pine and Gilmore in 1999 talked about "the newly identified offering of experiences" as something "occurs whenever a company intentionally uses services as the stage and goods as props to engage an individual" (p. 10), but this definition only offers the experience provider's perspective, hence lacks a holistic view of this phenomenon. It implies that the consumption experience is wholly designed by the company, to sell to the consumers. Later, several contributions have realised that the consumption experience is not so much of another offering from the company in addition to its offered goods and services, as it is an intentional byproduct created by and add value to both the company and the customer (LaSalle and Britton 2003, Prahalad and Ramaswamy 2004, Shaw and Ivens 2005). In this perspective, the consumer is seen as a *person* – with emotional ability and a unique background – who co-creates their own experience with the company. The role of the company, or event organiser, in this approach, is not to sell (or stage, as in Pine and Gilmore's definition) experiences, but rather is to provide artifacts and contexts for consumers to co-create an experience of themselves (Gentile et al. 2007).

Aware of this shift in perspective, Poulson and Kale (2004) define a commercial experience as "an engaging act of co-creation between a provider and a consumer wherein the consumer perceives value in the encounter and in the subsequent memory of that encounter." In this definition, a commercial experience is not perceived merely as what a consumer receives from the company's offering, but it highlights that an experience is co-created during the interaction between a provider and a consumer.

Emphasising on this notion of value co-creation, Gentile et al. (2007) develop an even more elaborate description of the customer experience, combining ideas from LaSalle and Britton (2003), Shaw and Ivens (2005), and Schmitt (1999):

> The Customer Experience originates from a **set of interactions** between a customer and a product, a company, or part of its organization, which provoke a reaction (. . .). This experience is strictly **personal** and implies the customer's **involvement** at different levels (. . .). Its evaluation depends on the comparison between a customer's **expectations** and the **stimuli** coming from the interaction with the company and its offering in correspondence of the different **moments of contact or touch-points** (. . .).

Even though Gentile et al. thoroughly describe what characterises a customer experience, they, however, still lack a holistic view of the experience creation arena, for an experience, especially a service experience, is not shaped by the company and the customer alone, but it is also affected by the presence of other customers. Grove's and Fisk's (1997) research on tourists' experience at tourist attractions in Florida reveals that there is a significant amount of incidents where the subjects report their experiences being affected by the presence of other tourists, both negatively and positively. This is explained that different customers sharing the service environment can have different needs, values, ways of expression, and cultural backgrounds, and these all can contribute to one or more customers being dissatisfied with the service experience. On the other hand, the presence of others can also provide excitement and stimulate audience participation that enhances one's experience (Grove & Fisk 2007). These interpersonal exchanges can strongly influence the service quality as perceived by customers, sometimes having an even more profound impact than the service personnel (Lehtinen & Lehtinen 1991).

From the above discussion, it is clear that the consumer's experience is a set of interactions between different parties: the company with its communication and marketing efforts, proposing the necessary context and "props" with which the experience occurs; the consumer with his/her own interpretation of the proposed values, as well as own expectation that would affect the extent to which the experience is enjoyable; and lastly, in a service setting, the other consumers, whose presence and behaviours may have impact on each other's experience. A visualisation of this co-creation process is presented in Figure 1, using a diagram adapted from Gentile et al. (2007).

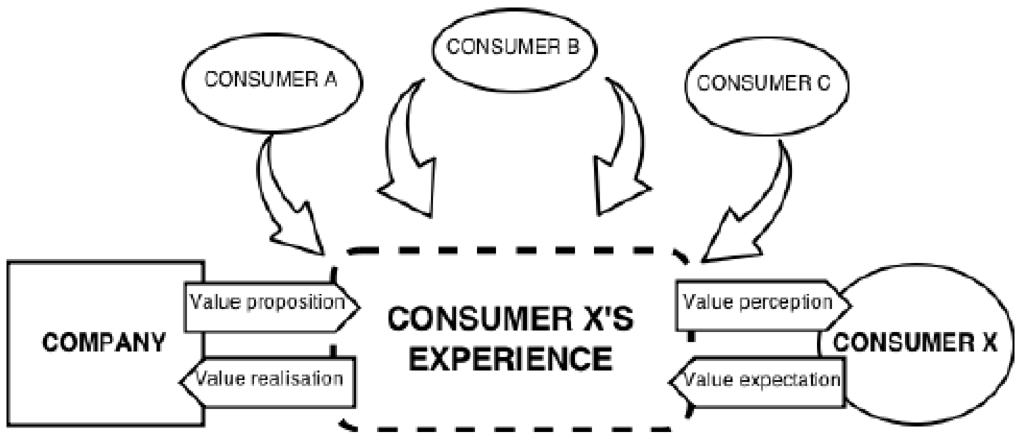


Figure 2. The co-creation of consumer experience in a service setting

3.5.2. The multi-dimensionality of experience

As the literature on consumer experience is so fragmented, there has been little common ground on what characterises a consumer experience. However, there is one thing that academics and practitioners alike agree on, that is the multi-dimensionality and multi-characteristics of consumer experience.

In their pioneering work in 1982, Holbrook and Hirschman describe explore the previously neglected "experiential aspects of consumption", being the seeking of leisure, esthetics, symbolic meaning, variety, hedonic response, creativity, emotions, play, etc. that are shortened as Fantasies, Feelings, and Fun. Later, these "three Fs" is developed into the "four Es" of Experience, Entertainment, Exhibitionism and Evangelising (Holbrook 2000). According to Tynan and McKechnie (2009), these studies highlight several factors of experience: the significance of examining the consumption experience as a holistic process from pre-purchase to disposal/outcomes, the emotional dimension of consumption, the fact that individuals do not just receive but also respond and react to experiences, and lastly, consumers can respond not only by using past experiences but also by evoking imagination and daydreaming.

Instead of analysing different aspects of one experience, Pine and Gilmore (1998) set out to categorise different types of event experience, using a two-dimensional model. One dimension corresponds to the participation, meaning the extent to which a person influences the event. It can be as passive as a moviegoer seeing a movie at the cinema, or as active as a person skating in a skate rink with other skaters. However, by classifying events into different participation levels, Pine and Gilmore are again enforcing the notion that an experience is sold as a "packaged" offering to the customers, that customers' experiences of the same event are identical. Also, this approach ignores the possibility that other presenting individuals can as well affect each other's experience of the same offering. The other dimension is connection, which means the extent to which a person takes part in the event experience, from merely absorption to fully being immersed in the sights, sounds, and smells that surround them.

From these two dimensions Pine and Gilmore sort experiences into four categories, educational, escapist, esthetic and entertainment (Figure 3). Low connection and high participation is an educational experience, for example, attending a class. The usual leisure events like watching television or attending a concert fall into the entertainment category with low connection and passive participation. Activities where customers immerse themselves with the experience but have little or no effect on it is classified in the esthetic category, for example, a tourist enjoying the scenery of Paris. Lastly, activities that score high on both the participation and connection spectrum are escapist experiences, which the authors claim can teach just as well as educational events, and be as entertaining as entertainment activities. Examples of this category are taking part in a play, or playing in an orchestra.

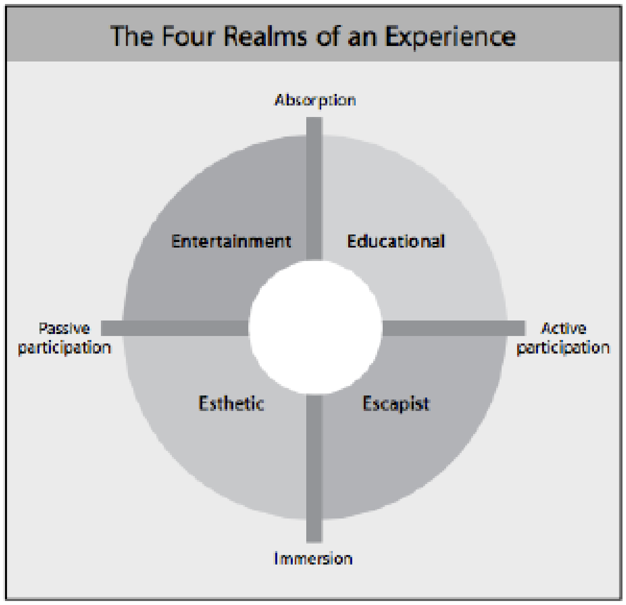


Figure 3. Pine and Gilmore's Four Realms of an Experience (1998)

While Pine and Gilmore's categorisation of event experiences offer a clear-cut and easy-to-understand model, it is, in fact, a little too good to be true. As mentioned above, there is no absolute passive participation where a customer has zero impact on his or her own experience. According to Figure 2, the same experience offering is received differently by every different individual due to one's own values and expectations, not to mention the third factor of fellow customers' presence. In addition, it is extremely difficult to define and draw the line between what is absorption and what is immersion on the connection spectrum. There is no convincing reason why watching television is absorption, but looking at artworks in a gallery is immersion. Even the authors themselves acknowledge that there are experiences that blur the border of all these four categories, for instance gambling in a casino, or going to Disneyland.

On the school of thoughts that an experience should be an act of co-creation between the consumer and the experience provider, Poulsson and Kale (2004) argue that there are five elements for a successful experience: personal relevance, novelty, surprise, learning, and engagement, and for an encounter to be labelled as an experience, at least one of them need to be apprehended by the consumer.

Personal relevance is described as "the state of arousal, activation, and preparedness to engage in a specific experience". It concerns the expression of true self, which is the unity between thought and action, and a sense of community from the integration across participants. Personal relevance, according to Poulsson and Kale, is closely related to and affects *engagement*, which is the extent to which the event actively seeks to involve the customer, through interaction and a feedback system. *Novelty*, on the other hand, is "a change in stimulus conditions from previous experience". An element needs not to be entirely novel by itself, but what matters is whether it is novel to the customer. Poulsson and Kale give the example that a tiger by itself is not new, but the notion of petting a tiger might very well be novelty to the visitors of a zoo. However, too much novelty can elicit avoidance responses, therefore, this element should be implemented with caution. Similar to novelty is *surprise*, meaning unexpected outcomes that contrast with the regular expectations of the customers. In order for surprise to work, it is important that the experience provider understands, and orchestrates if need be, the customer expectations of the experience. Last but not least, *learning*, which is furthered by motivation, cues, response, and reinforcement. The authors claim that learning leads to engagement when personal relevance is present and the learning environment is under control (Poulsson & Kale 2004).

It would be a fault to talk about the different dimensions of consumer experience without mentioning Schmitt's (2009) work, one of the most cited studies in the field, about managing experiences. An experience in Schmitt's Strategic Experiential Modules share several characteristics with Poulsson and Kale's (2004) idea of a successful experience: sensory experiences (sense) – novelty; affective experiences (feel) – surprise; creative cognitive experiences (think) – learning; physical experiences, behaviours and lifestyle (act) – engagement; and social-identity experiense that result from relating to a reference group or culture (relate) – personal relevance. Drawing from Schmitt's (1999) framework and a study of three Italian researchers Fornerino, Helme-Guizon and de Gaudemaris on five dimensions of an immersive consumption experience, Gentile et al. (2007) establish a set of six components of the customer experience looking from the perspective of experience manangement.

- Sensorial Component: a component that addresses sight, sound, touch, taste and smell "so as to arouse aesthetical pleasure, excitement, satisfaction, and sense of beauty.

- Emotional Component: a component that generates moods, feelings, and emotions so as to create positive relation with the company, its brand or products/services.

- Cognitive Component: a component connected with thinking or conscious mental process; an offering may aim to engage customers in using their creativity or to challenge common patterns of thinking.

- Pragmatic Component: a component coming from the practical act of doing something, including but not limited to the usability of the product.

- Lifestyle Component: a component that is the result of the affirmation of a person values translating to a new lifestyle and behaviours.

- Relational component: a component that involves the customer's relationship with other people and also with his/her ideal self. This component is where the aforementioned effect of fellow customers' presence and behaviours is addressed. Through it, the product or service offering "can be also a means of affirmation of a social identity, including a sense of belonging or of distinction from a social group". (Gentile et al. 2007)

These components, along with Poulsson and Kale's (2004) five elements of a successful experience, will be the fundamental blocks in this research's analysis of attendee experience at a trade event.

On top of looking at a consumer experience through a multi-element perspective, previous literature has also contributed by approaching experiences with a timeline analysis. Tynan and McKechnie (2009) offer a breaking down of the consumer experience in terms of time based on earlier works, in which they outline the activities consumers engages in throughout the whole experience, the possible sources of value for consumers, and the outcomes they can expect from the experience (see Figure 3).

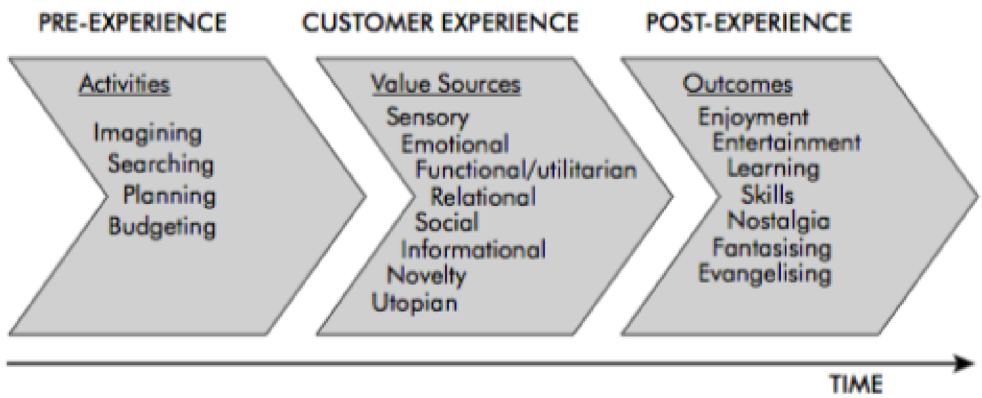


Figure 4. The customer's experience – activities, value sources and outcomes (Tynan and McKechnie 2009)

3.6. Theoretical framework

Combining different components of the consumer experience and the different parties who co-create the experience, a theoretical framework is presented as followed:

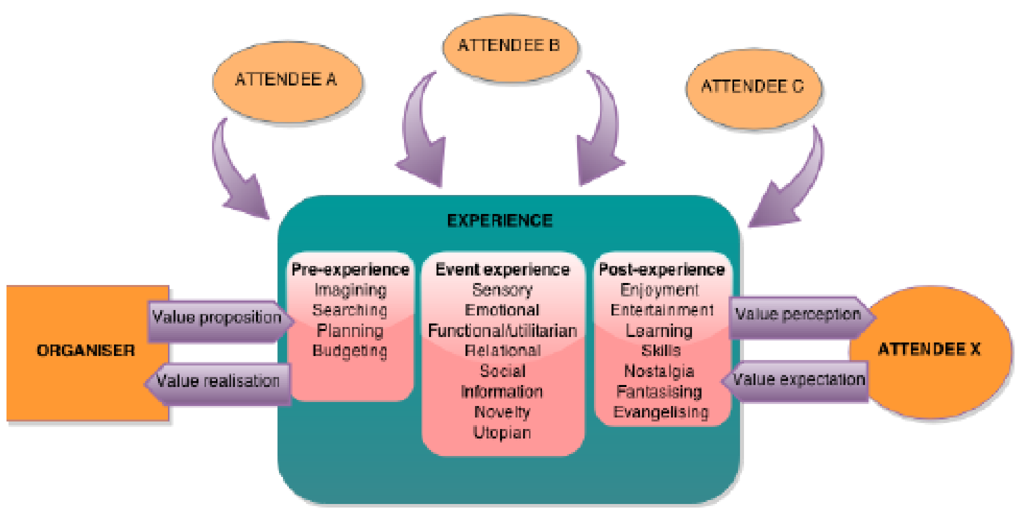


Figure 5. Complete framework of attendee's experience at an event

In a trade event setting, an event mobile application has the potential to be a communication channel between attendees and the organiser, as well as among attendees. Its usage also spans from before the event starts, to even after it has finished. Therefore, in the diagram above, the app manifests itself in all the purple areas, where value exchange and interactions between different parties take place. In this sense, the app is a channel for meaning-making and thus, is a part of the communication process.

4. Methods and data

4.1. A phenomenological approach

There are two overarching perspectives that shape our understanding of research. The first one is positivism, a term coined by Auguste Comte in the 1830s, referring to science and observable facts (Stromberg 1986, as cited in Maykut & Morehouse 1994, p. 3). Later, positivism has come to mean "objective inquiry based on measurable variables and provable propositions" (Maykut & Morehouse 1994, p. 3). In other words, positivist researchers believe that science should be primarily concerned with explaining and predicting observable events with quantifiable evidence. On the other hand, the second approach – phenomenology – focuses on understanding "the meanings events have for persons being studied" (Patton 1991, as cited in Maykut & Morehouse 1994, p. 3). Historically, with the lead from physics and chemistry, positivism was the only way of understanding reality. This in turn has made objective observation and quantifiable data the dominant approach to conducting research. This view has marginalised all other ways of doing science; that is any non-experimental and non-objective approaches, or in other words, qualitative research.

However, works like Thomas Kuhn's "The Structure of Scientific Revolutions" (1962) and Yvonna Lincoln and Egon Guba's "Naturalistic Inquiry" (1985) demonstrate that there is more to reality than "hard" sciences, and there is more to doing research than quantitative methodology (Maykut & Morehouse 1994, p. 9-10). An alternative paradigm was introduced to correspond with the phenomenological approach, in addition to the dominant paradigm of positivism. In this paradigm, there are multiple realities instead of just one, and the knower is part of what is to be known, therefore cannot be completely objective. In the alternate paradigm, explanations from one time and place cannot be generalised to other times and places, and there could be multidirectional relationships between different events (Maykut & Morehouse 1994, p. 12).

Choosing the alternate paradigm, and the phenomenological position within it, is suitable for this research, as this project seeks to discover new knowledge in a topic that practically has not been researched before. The aim of the thesis is not to verify what has been already studied before by other methods, but to discover "salient propositions by observation and the careful inspection of the patterns which emerge from the data" (Maykut & Morehouse 1994, p. 13).

Understanding the characteristics of qualitative research, the project adopts a case study approach, in which the rich narrative of one particular trade fair allows a detailed study of the role of the event application in attendees' experience in the event's specific context. The data collection was also taken place in a natural setting, as suggested by Maykut and Morehouse (1994, p. 45), to discover any personal meaning that might be tied to the context. Lastly, the data analysis process is largely inductive, meaning what is important is not predetermined by the researcher, but would emerge in the analysis process. The researcher started the process with some ideas of what to look for, and where to look for it, but was also open to new propositions emerged during the analysis.

4.2. Research strategies and data collection

In this section, the strategies and methods used in this project will be described, along with the sources of data of each method. The study employs both primary (questionnaire and observation) and secondary (content analysis) data. The four research strategies, case study, survey, ethnography, and phenomenology (content analysis) are explained.

4.2.1. Case study – Why DesignCon 2015?

The fact that a case study strategy is adopted for this research is not only due to the limited resources available for a project of this scale, but also because an event app is very context-specific, hence a cross-context study will not be able to address the differences in expectations and behaviours of attendees in different events, which are of utmost importance when talking about how the app affects their experiences. Every trade event differs in the specific industry it is in, the kind of activities it offers (exhibition, conference, workshop, training, etc.), and the audience it serves (managers, technicians, sales people, etc.), and all these features are reflected in how the app is designed and expected. Moreover, as this is an exploratory study, it is important to limit the scope of the project and focus on a specific event to first discover patterns and salient propositions of the topic.

According to Denscombe (2003, p. 31), the case study approach does not only allow an opportunity to delve into details that might not have been apparent through more superficial research, it is also more about relationships and processes rather than isolated factors. It deals with the case in its entirety, therefore offers the chance to unravel the interconnectedness and interdependence of different parts in the case. Case studies do not just restrict the attention to outcomes, but emphasise the workings of relationships and social processes that lead to those results. The real value of case studies – according to Denscombe – is explaining "*why* certain outcomes might happen – more than just find[ing] out what those outcomes are".

There are also other advantages to doing a case study, such as little pressure on the researcher to impose controls or to change circumstances, because the aim is to investigate phenomena as they naturally occur. Moreover, it allows the use of multiple research methods; in fact, even encourages it, because of the complex reality that needs to be captured. In parallel, multiple data sources are often used, which in turn facilitates the validation of data through triangulation (Denscombe 2003, p.38).

Although there are several advantages to doing a case study, the selection of case is also of crucial importance that can determine the value of the research. According to Denscombe (2003, p. 33), the most common justification for the selection of a particular case is that it is typical, meaning a case that is similar in important aspects with the majority of other cases, so that the findings are more generalisable. This is the same logic that has been applied when selecting a case for this study. The most important criterion for selection was of course a trade event (exhibition, fair, convention, etc.) that utilises mobile application as (at least) a communication channel. The case should be a relatively conventional trade event, where company representatives and visitors gather to discuss about new products/services, gain information about the industry, and network. DesignCon 2015 fully satisfies this criterion, as it is a typical trade event where products and services were showcased at the exhibition, and knowledge and training was offered through workshops and conferences.

However, in addition to "typical instance", Denscombe (2003) also mentions "extreme instance" as a ground for selecting a case, meaning something of a contrast with the norm (p. 33). In an extreme instance, a case with a specified character might be picked for the logic that doing so would highlight a certain factor of the case. Even though DesignCon 2015 is not necessarily an extreme case in terms of trade events in general, it was actually picked also for a second reason that it is the event belongs to the ICT (Information and Communication Technology) industry. It has been decided that since event mobile app is an ICT innovation, and a very recent one at that, its effect would be more easily seen in the ICT industry where early adopters are expected to be. In addition, even when compared to other apps of technology events, DesignCon 2015 app is also more special in the way that it features a mini social network where attendees, both visitors and exhibitors alike, had the opportunity to connect and interact with each other. This feature was not found in any other ICT trade fairs that were considered during the time frame of data collection for this project. As will be explained in the findings section, networking is one of the most important objectives for attendees when attending trade events, therefore, networking facilitation within the app might be the future for event apps, and this project would like to set out to explore this phenomenon in details.

4.2.2. Survey – Questionnaire

Survey is used when opinions are sought after in place of factual information. In many large-scale studies, survey questionnaires are mailed or emailed to respondents to answer at their own time and then post back to the investigator. However, it is not the case in this study since the investigator is already at the scene for ethnographic field work and the study is relatively small in scale so printed questionnaires were handed out to respondents in person. Attempts have been made to ask the organisers of the event to send a digital version of the questionnaire to participants via the app or email but were not succesful. If done in that way a larger sample would be obtained, and respondents would have more time to contemplate the questions and maybe give more insightful answers. In the end, the researcher settled for giving out questionnaires in person, with a total number 300 questionnaires sent out, and 92 returned for analysis.

According to Khan (2011, p. 98-99) the advantages of survey include its ability to cover a large sample and conceal confidential information, as well as its relatively low cost. However, as Khan refers to mailed questionnaire, he adds also the lack of biasness and field staff required as advantages, both of which are not applicable in this particular case. Although care was taken to ensure the influence of the investigator is minimal, there might still be some bias due to the presence of the investigator and in some cases the pressure to return the answer sheet on time.

Khan also lists some disadvantages of this method, which include higher non-response rate and different interpretations of questions due to the inability to explain or probe further (2011, p. 98-99). Survey is also inadequate for in-depth study for the latter reason.

Designing the questionnaire, therefore, is crucial to reduce some of its drawbacks. As what written down on the questionnaire is almost the only way to communicate with respondents, the questions have to be specific enough so that they are not open to different interpretations, but at the same time as brief as possible so that the questionnaire is not overwhelmed and maintains good quality answers throughout.

In this research, the questionnaire (Appendix) is designed to fit one A4 page. On top of the page is information about the purpose of the survey, the institution of the researcher, as well as where respondents can return it in case they cannot find the researcher (to encourage taking time to fill out the answers). It minimalises the demand for personal information by not asking information such as name, company, or gender of respondent.

4.2.3. Ethnography – Observation

Much of what we know comes from observation. Not only that, according to Cooper and Schindler (2006), observation sometimes is the only method available to gather certain types of information, because it is independent of records by others. For example, there is some information that most participants do not remember or think is relevant, therefore is not shown by other methods of research such as interview or survey, and can only be picked up by the researchers themselves through observation. Another value of observation as a research method is that it occurs at the same time with the original data, and it alone has the possibility capture the whole event in real time, in its natural environment. Also, observation most of the times is less intrusive than other data collection methods, and if necessary can also be disguised more easily than questioning, hence, reducing biases by participants (p. 226).

Nevertheless, there are limitations of the observation method that should be aware of by researchers. First of all, because observation takes place in real time along with the data occurring, it is difficult to predict where and when a particular event would occur, and hence there is the risk of missing important data. Secondly, information gained through observation is restricted to surface indicators, from which inferences drawn by researchers are rather subjective. Similarly, it is difficult to gather information on such topics as intentions, attitudes, opinions or preferences with observation (Cooper & Schindler 2006, p. 228).

The reason observation is chosen as one of the methods for this study is because of the fact that every trade fair has their own culture and community that it is nearly impossible to study trade fairs without attending them personally. A trade fair experience is a combination of the experience of the venue, the program, the exhibition, and the interaction with other attendees and organisers, all of which are impossible to obtain by any current means of recording. The chosen method of ethnography for this study is participation observation, meaning the researcher "enters the social setting and acts as both an observer and a participant" (Cooper & Schindler 2006, p. 230). By this way the researcher could experience the event as it happened to other attendees, and immerse in the community and its culture to understand the behaviours and expectation of the attendees. At the same time, the ethical risk of concealment and consent is limited as the researcher identified herself as a researcher publicly on her event badge, and also explained the purpose of the study when conducting the survey.

The limitations of the observation method are controlled through several measures. The missing of data by the researcher not being at the right place at the right time is limited by setting a clear objective of what information is to be gained by observation. By just aiming for general insights into the app usage context, and the space and time of the event, there is generally no need for being at any particular place at a particular time. The participation observation also helps with information because many insights of the event were already gained by being an attendee in the first place. On the other hand, topics such as intentions, opinions, and preferences that are not visible through observation, are covered by the complimentary method of survey.

According to Cooper and Schindler (2006), there are non-behavioural and behavioural observation. Within behavioural observation there are also four major categories, *nonverbal behaviour* – including body movement and motor expressions, *linguistic behaviour* – both informative (words) and non-informative (sounds) speech, *extralinguistic* behaviour (vocal, temporal, interaction, and verbal stylistic), and *spatial relationship*, i.e. how a person relates physically to others (p. 225 – 228).

In this study, non-behavioural observation focused on the demographic of the attendees. As the survey questionnaire was designed to be as non-intrusive as possible, no questions on gender, age and specific profession were asked, therefore the general demographic information has to be obtained through observation. Within behavioural observation, *nonverbal behaviour* was observed as in how DesignCon attendees carried themselves around the venue (e.g. whether they were constantly looking at the phone screen or relying on the paper pamphlet, whether attendees had to hurry or had time between sessions, and whether exhibitors were stationed at their booth or also visited other areas).

Linguistic behaviour was observed on the app as in how attendees expressed themselves and interacted with each other on the DesignCon app. Because all linguistic behaviours observed on the app was in written format, non-informative sounds (e.g. ah, uhm, uh huh, etc.) and extralinguistic behaviours that could have been found in speech would possibly be lost, but on the other hand, the written format offers other valuable data such as the use of emotional icons, punctuations, as well as other general typographies to express emotions.

4.2.4. Phenomenology – Content analysis

"Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the context of their use" (Krippendorff 2012, p. 24). Krippendorf emphasises on the "replicable" and "valid", which mean different researchers working under different circumstances should come to the same result, and that resut should be able to stand the test of criticism.

The key to content analysis, according to Krippendorff (p. 27-28), is recognising that all texts are expected to be significant to everyone who reads them, not just the analyst. Content analysts must look beyond the medium, the characters, the shapes, to see how individuals use different texts in their respective worlds.

Krippendorff (p. 35-45) sets out a framework for content analysis that begins with a body of text, which, unlike data from other methods like surveys, focus groups, and psychological experiements, most of the time are not generated to be analysed but exist to be read, interpreted and understood by people other than the analyst. Next is the research questions that the analyst seeks to answer by examining the body of text. Research questions should be answerable and allow for validation by acknowledging another way to observe the occurrence of the inferred phenomena . The analyst then also has to decide on a context within which to make sense of the body of text, and inferences (deductive, inductive, abductive) that are intended to answer the research question. Lastly, the framework requires content analysis be validatable, at least in principle, which means another type of method could be used to validate the findings of the analysis.

In this study, the data is the structure and appearance of the DesignCon 2015 app, as well as content that users post on the app, including text, photos, and emojis. The research question that applies in this content analysis is whether the app plays a role in attendees' experience of DesignCon 2015. This could be found out by whether attendees utilise the app, and if so in what way. The findings by content analysis can be validated by a survey to attendees; and in fact the survey questionnaire has been designed to back up discoveries by this method.

The context that is used to construct meanings of the text is attendees of a chip and processor trade fair expressing themselves and sharing information about the fair with each other through a medium that they know any other attendee can have access to. Besides the physical venue, the app is a common platform that allows attendees a feel of community and togetherness, and this one does not require physical interactions. Users who post on the app also do not know who exactly are reading, so unlike face-to-face conversations, it is in their interest to maintain their public image on the app.

This content analysis employs abductive inference, meaning proceeding to the answer to the research question by logic. Of course, such inference can be made only with a certain probability, but so is any inference. Having the survey as the validating evidence also helps with the validity of the content analysis findings.

4.4. Data analysis process

Data collected from observation, survey and content analysis are grouped into categories. Since the research covers different areas include understanding who the attendees are, what they think of the app, and what role the app plays in each stage of the event experience, each method offers findings that answer one or two of those questions.

Data from the first half of the questionnaire helps build an understanding of who the attendees are. Thus, they are categorised into the type of attendee, the purpose they set out coming to the trade fair, as well as their evaluation of the experience in general. The second half of the questionnaire tackles questions regarding their knowledge and usage of the app (or the lack thereof). These data are then linked to information about attendee profile to understand the role of the app in the experience of different types of attendees.

Data about the app itself are collected before, during, and after the event. Posts by users are put into contexts to understand what kinds of emotions and purposes they serve. Having the observation method helps in this case, as the researcher is an attendee by herself, it is easier to understand the mentality of an attendee navigating through a large event, as well as expectations that an attendee might have.

5. Findings and discussion

5.1. Attendee profile

With DesignCon being a combined event of conferences and exhibition, there are several different types of attendees, coming to the event with various motivations and objectives. The first question of the survey asks respondents to identify themselves as one of the seven options, of which six are stated by the researcher, and one option is blank allowing respondents to fill in their own type of attendee if it is not among the given options. The six pre-determined options are exhibitor, visitor, speaker, industry analyst, researcher and media. Certainly these are not completely mutually exclusive, as for example, an industry analyst can be a visitor, a researcher can also be a speaker. However, it was understood that the attendees would pick the most important role to them. The scope and definition of the term "visitor" is also an issue, as virtually any attendee can identify himself/herself as a visitor no matter what their main role is. Nevertheless, the understanding is taken for granted that if an attendee does not belong the other categories, then he or she is a visitor. In reality, no respondent reported difficulty when answering this question. Also, no respondent found the need to fill their own role in the blank option, so all responses are within the pre-determined options.

It does not come with a surprise that the majority of responses for this question are visitor, 71.7% (N = 66) and exhibitor, 15.2% (N = 14), all other options account for the remaining 13% (N = 12). Although the questionnaires were distributed randomly to attendees, the visitor/exhibitor ratio might not represent the actual proportion simply due to the fact that the exhibition only took place in two out of four days of the event while the conferences were carried out the whole time, hence, the visitors might be surveyed more.

To identify the attendees' purpose of coming to DesignCon, the survey includes a question about their objectives, where respondents can give more than one answer. Overall, the most pursued objective for all attendees when going to DesignCon is to gain knowledge through conferences (66.3%). Obtaining market and industry information (39.1%) and gaining new ideas (34.8%) are also very important to attendees. These are followed by networking with people in the industry (34.8%), showcasing products/prototypes (13.0%), looking for trading opportunities (3.3%), and enhancing corporate image (1.1%).

For visitors, the most popular purposes are, gaining knowledge through conferences, obtaining marketing and industry information, and getting new ideas, with 68.2%, 43.9%, and 39.4% of visitors respectively choosing each option. Networking is also highly important to visitors with almost a third of them include this in as one of their objectives. On the other hand, exhibitors value showcasing products/prototypes (57.1%), gaining knowledge (42.9%) and obtaining market and industry information, gaining new ideas, and networking each accounts for 28.6%.

Objective	Overall	To visitors	To exhibitors
Gaining knowledge through conferences	66.3%	68.2%	42.9%
Obtaining market and industry information	39.1%	43.9%	28.6%
Gaining new ideas	34.8%	39.4%	28.6%
Networking with people in the industry	34.8%	33.3%	28.6%
Showcasing products/protoypes	13.0%	4.5%	57.1%
Looking for trading opportunities	3.3%	1.5%	14.3%
Enhancing corporate image	1.1%	0%	7.1%

Table: Attendees' objectives

Regarding how they judge their objectives had been met up to the point of surveyed, on a scale of 1 to 5 with 1 being "Very unsuccessful" and 5 being "Very unsuccessful", it seems that the attendees were greatly positive because the overall average score is 4.0. However, it is interesting to note that exhibitors on average seem to be happier with their result (4.1, compared to 3.9 of visitors'). Similarly, in assessing their overall experience of the whole event from the beginning to the point of surveyed, exhibitors were also slightly more satisfied than visitors (4.1 and 4.0 respectively).

Deriving from ethnographic fieldwork, it can be said that DesignCon 2015's attendees are significantly diverse. Regarding their age, attendees' ages vary in a relatively wide range, estimated from twenties to seventies. There were exceptions, for example, a teenage session panelist, but those were rare. The large variation in age might have been one of the reasons for the difference in technology adoption regarding the usage of the DesignCon app that will be discussed in later sections. Similarly, attendees came from various levels of hierarchy and departments in a company, for examples, engineer/technical staff and business manager. However, the majority of them is male and had engineering/technical background, even for the managers.

It is also worth noting that the attendee profile is not the same throughout the whole event. There were several different kinds of passes that allow different activities. In general, in order to attend conferences one needs some kind of a paid pass, but for the exhibition (expo) that took place in the second and the third day of the event, an Expo Pass was free to obtain to from Registration booth.

5.2. Application adoption

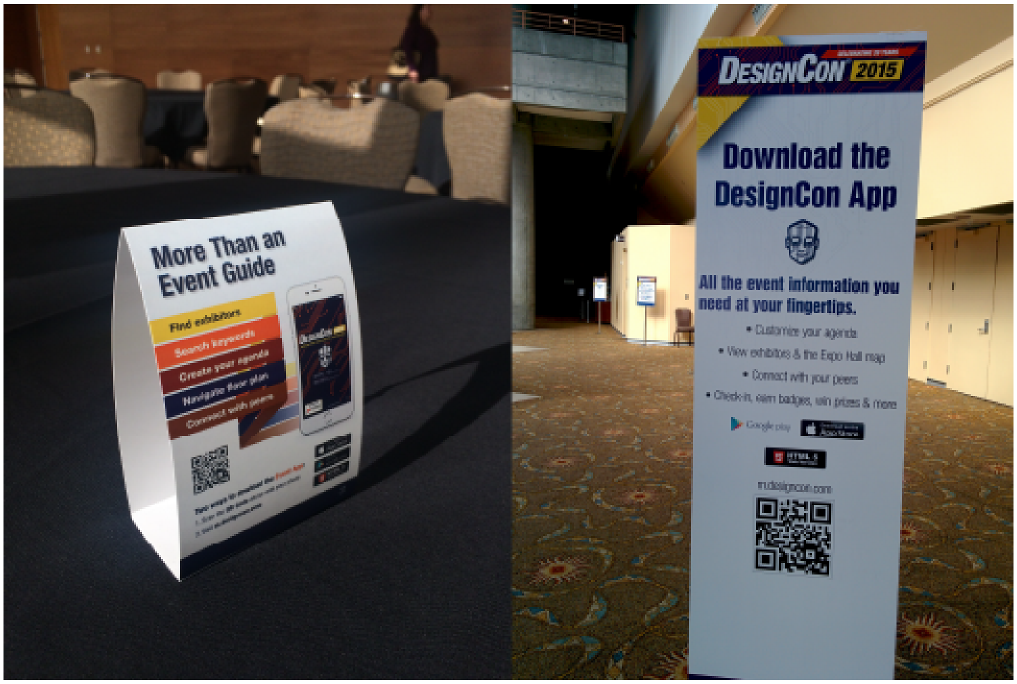
Information about the DesignCon application is available across multiple promotion materials both online and offline, both before and during the event. However, it seems that promoting the app is not among top priorities for event organisers, at least on online materials. Although it is not difficult to find information about the app online if one is specifically looking for it, for someone not aware of the app's existence, this information can be easily overlooked. For example, on an email sent five days before the event to attendees who had already purchased an event pass, titled "Only Five Days till DesignCon, Here is What you Need to Know!", there is a section explicitly mentions the app, but placed towards the end of the email:

> **Download the Official DesignCon App**
>
> Get access to the full event schedule and receive notifications for changes, updates, and prize giveaways! Download DesignCon's iPhone or Android App, or view the event website on your smart phone at m.designcon.com.
>
> **Use #DC15 During the Event to Win**
>
> Share your experiences with your fellow Chipheads. Follow @DesignCon for schedule updates, behind-the-scenes action, and win great prizes!

Similarly, information about the app, what it does, and where to download it, can be found on the DesignCon website, but again, near the end of a rather odd place: in the "About" section, under "Stay Connected", and among other social media links:

> **MOBILE APP**
>
> Get the app at m.designcon.com - customize your schedule, see exhibitors and their products, connect with other attendees and check in onsite to earn badges, win prizes and more!

On the other hand, app advertisements at the event venue seemed to be placed at more prominent, and even strategic, places. For example, several human-sized standees at different locations across the venue, as well as brochures on table tops in common areas. Especially, app advertisements were strategically placed in Registration room, where every attendee had to visit at least once to claim their Pass. One common feature among these on-site app advertisements is that in addition to a link to where attendees can go to download the app, they also contained a QR code which can be scanned by attendees using smartphones so that they would be taken to the link right away without having to type it in the phone's browser.



Picture 1. App advertisements containing QR code for download displayed at several locations of the venue.

Having said that, the knowledge of the existence of the DesignCon application is quite widespread among attendees. Out of the survey respondents, 77.2% (N = 71) reported that they knew about the app. Comparing the awareness of the app between visitors and exhibitors, there is an apparent distinction with 80.3% of visitors were aware about the app, while that of exhibitors is only 50%. The disparity in awareness between the two types of attendees may have come from the fact that many exhibitors only participated in the two Expo days of DesignCon (with the limited Two-Day Pass), whereas most visitors spent the whole four days, which made them more exposed to on-site advertisements of the application. Furthermore, since exhibitors spent most of their time at their booths and were more focused on reacting to visitors' enquiries, they might be less attuned to the advertisements.

Out of the attendees who knew about the app, the app adoption ratio is 0.49 (49.3%), meaning out of 2 people who know about the app, one person would use it. Among visitors, this percentage is 47.2%, and it is 42.9% for exhibitors. This can be explained that because visitors have more diverse interests at the event, with different happenings taking place at different times and places that they want to go to and may need an app to keep track of, whereas for most of the exhibitors, their job involves stationing at their booth, hence less need for an application. Out of all surveyed respondents, over one third (38.0%) of attendees used the DesignCon 2015 app.

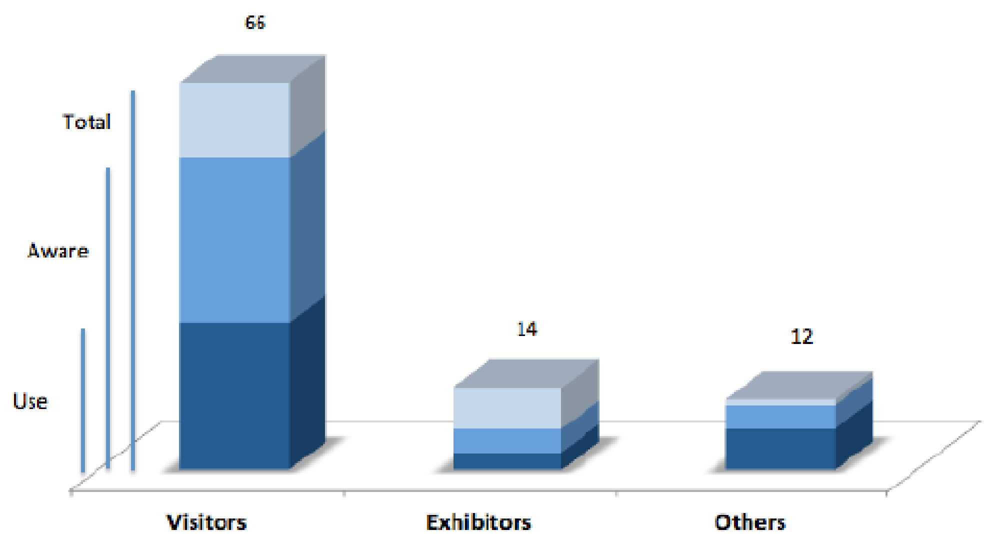


Figure 6. Awareness and adoption rate across different types of attendees

There are four main groups of reasons why some attendees knew about the app but chose not to use it; lack of suitable devices, lack of time, technology difficulty, and preference towards traditional alternative. For the first reason, six respondents, 8.5% of people who knew about the app, stated they did not have a smartphone when asked why they did not use it. For instance, one person wrote "My cell phone is so old all I can do is talk on it", and another just simply stated "old school". Given the wide variation in age of attendees, it is only natural that some people just did not own a mobile device.

Four respondents expressed the reason for not using the app is simply because they were "too busy", or had "no interest" in it. Interestingly, two out of four are exhibitors, one is a speaker, and only one person is a visitor. Although it is still too small of a sample to conclude, it is logical that exhibitors and other attendees who came to the event with more pressing responsibilities had less time to actively seek and familiarise themselves with a new form of communication. Another respondent knew about the app but decided not to use it just because s/he had discovered it too late.

While the first two reasons of attendees lacking suitable devices or time are more or less unavoidable, the remaining reasons are those that event organisers can learn from to improve the app adoption rate. Eight respondents gave reasons relating to technology issues, which include the app not available for their current operating system (Windows phone and Blackberry, or required system update); and a concern towards having too many apps would slow down the system ("too slow to download, I hate bloated apps", "bloatware", "too many apps on phone"). One person explicitly stated s/he did not use the app because it did not offer the location of where a session is in the building. Although the app does have a map of the venue, what this respondent meant is that the map is static, so it cannot give live navigation according to where a person is in the venue.

Lastly, the majority of explanations for not using the app are about a preference towards the paper pamphlet of the event's programs, which was included in a package given to attendees when they registered ("prefer paper", "I find it easier to use book", "paper works fine", "hard copy easier to use", etc.). This pamphlet has a map, detailed information about each day's program, information on keynote speakers, and a list of exhibitors. In other words, in terms of the amount of information about the event, the pamphlet offers the same, or even slightly more, than the app does. However, it lacks interactivity like the ability to search for certain information using keywords, to filter information according to certain time and venue, to personalise agenda, etc. Of course it also lacks the social network to connect with other attendees. Therefore, attendees who preferred the paper program to the app either were not fully aware of the app's features, or did not consider the benefit of them outweighing the hassle of having an extra app on their phones.

In assessing whether the app is useful in facilitating networking and interaction, attendees rate it 3.14 on a scale of 5, with 5 being very useful. In terms of whether they agree that the app constitutes a large part of their event experience, there are 74% of those who use the app who gave average (3) and above average scores (4 and 5), with 5 being totally agree.

5.3. DesignCon app across the timeline of attendees' experience

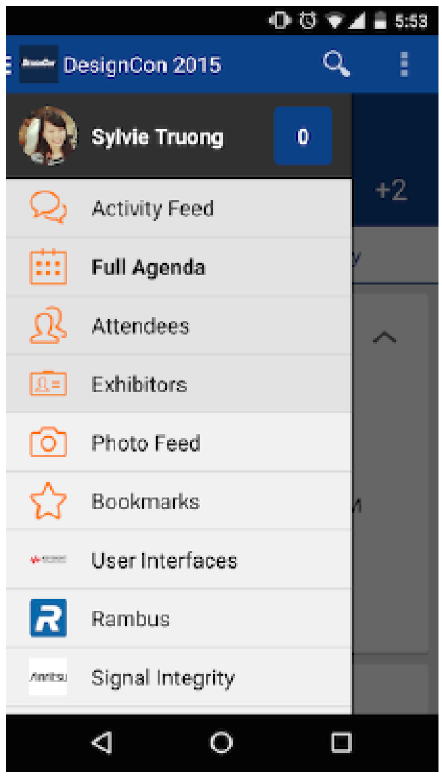
As outlined in the theoretical framework, according to Tynan and McKechnie (2009), there are four main activities that an attendee might engage in in anticipation of an event, namely imagining, searching, planning and budgeting; during event there are different value sources such as sensory, emotional, social, information, etc.; and after the experience there are outcomes to be achieved such as enjoyment, entertainment, learning, skills, etc.

However, it is essential to understand that in this time and age of digital technology, and especially for an analysis perspective of such technology advancement as mobile application, the boundaries of experience in terms of timeline between pre-, during, and post-event are much more blurred than how they were in 2009. For example, with the DesignCon app, attendees could already experience some novel, informational, and social aspect of the event by accessing to information and interacting with other attendees even before the event happened.

Nevertheless, for the sake of clarity and to avoid repetition, this section is still going to to divide attendees' experience into three distinguished subsections of pre-, during and post-event, with activities, value sources and outcomes outlined in Tynan and McKechnie's (2009) model.

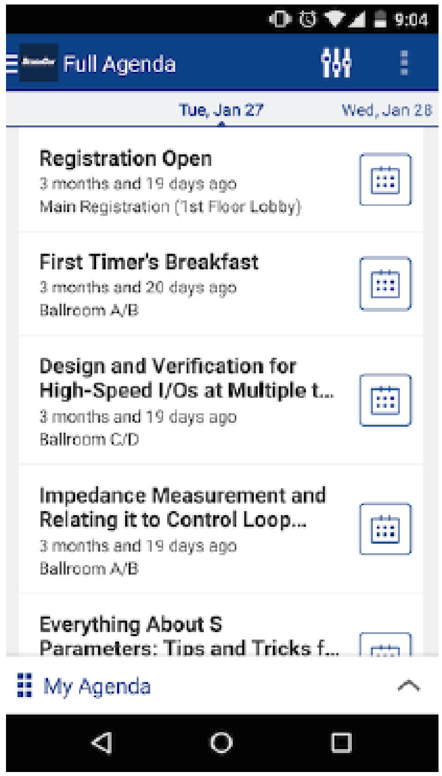
5.3.1. Before the event

After downloading and installing, a person must register an account in order to use the DesignCon app. This account can be used for the app and also to log in on the DesignCon website for customised content. The system would then send out an email containing an initial password for the account, along with brief instructions on how to use the app, including how to create a custom schedule, set up a personal profile, check-in to sessions and booths, participate in the event discussion with other attendees, and search for friends and colleagues using the "Attendees" function.



Picture 2. A part of the DesignCon app's menu

Prior to the event, on the app, attendees had the opportunity to access detailed information about all the programs and sessions, access the list of exhibitors, and attendees who have registered for accounts to use the app. Especially, attendees had the option to already customise their schedule by selecting sessions that they wanted to attend and add them to their own "My Agenda". Since one particular characteristic of DesignCon is that a day in the event was divided into several blocks of time with multiple sessions happening at every moment, detailed scheduling is crucial for attendees to keep track of what they want to attend and where they should be at a certain time.

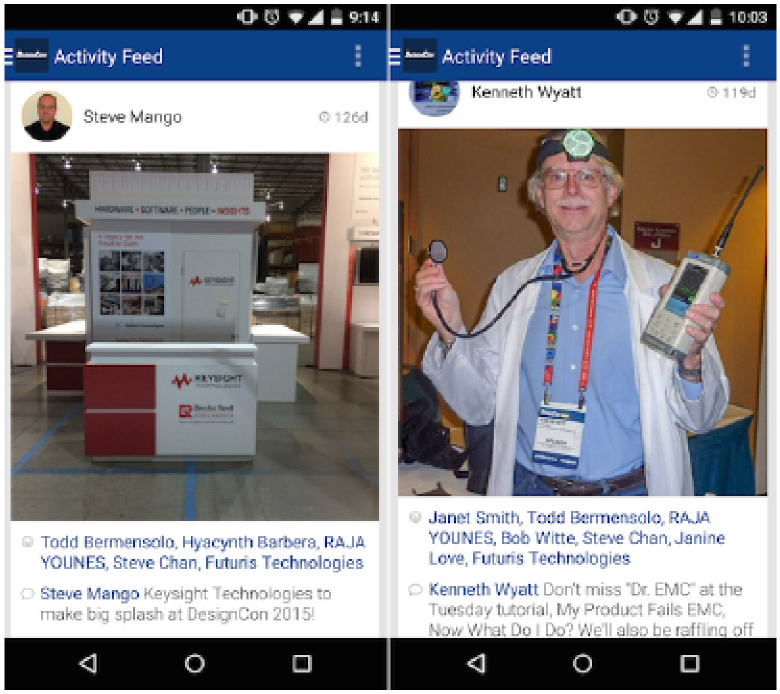


Picture 3. A screenshot of the event's agenda on the app

Although the above-mentioned features, including schedule customisation, can also be found on the event's website, they are much more concentrated and hence easier to find with the app. Attendees did not have access to paper pamphlets before the event so the only alternative to the app is the DesignCon website. There is one feature, though, that is only available on the app, that is the social feature under "Activity Feed".

Basically the DesignCon 2015 app was built in the model of a social network, in which attendees have the opportunity to post text or photos to the app to share with other people attending the event. They can like (by pressing a smiley face icon) or comment on others' posts. Since there is no "Friends" notion on this social network, all posts of everyone are displayed in "Activity Feed" starting from the most recent one. Furthermore, like a social network, attendees have the opportunity to create their own profile with a profile picture and information such as company and title. The profile page also displays how many followers one has, how many one is following (following allows one to receive notifications when the people s/he follows check in a place), along with one's "badges" (earned by doing certain activities, e.g. "checking-in" to a session) and connections. On this page other attendees can also see all posts published by the person.

Before the event, attendees with the DesignCon app could already read what others had posted to get an idea about the event adjust their expectations. Posts had started as soon as nearly two months before the event officially began on January 27th, 2015. These posts are from exhibitors and speakers, talking about their future exhibitions or sessions at the event. The style differs in every post, but one common factor is that most of them are very informational in terms of content; they often contain a link, time and place, booth number, or company information. However, it seems that this pre-event social opportunity was not utilised fully by attendees; in total there are only 20 posts published before the event, and only by a handful of people.



Picture 4. Pre-event posts

Going back to the theoretical framework, it can be seen that the DesignCon 2015 app has the ability to fulfill all the needs of attendees regarding pre-event activities, which are imagining, searching, planning and budgeting. Detailed information of event program and updates from other attendees facilitate imagination and help with information searching. A customised agenda allows thorough planning down to every hour, even minute, of the event experience. All in all, the information and tool enable attendees to map out how they want to spend their time at the event, focusing on only activities that are beneficial to them, thus help them arrange a suitable budget (for instance, selecting a two-day, three-day or all-access pass).

In fact, 80% of people who use the app (N = 28) reported also using it prior to the event. The number one most popular feature for pre-event usage is, unsurprisingly, scheduling, followed by navigating. There are less people using the app before the event to stay updated with news and networking, Interestingly, only four people checked "accessing exhibitor directory" as one of the usages before event.

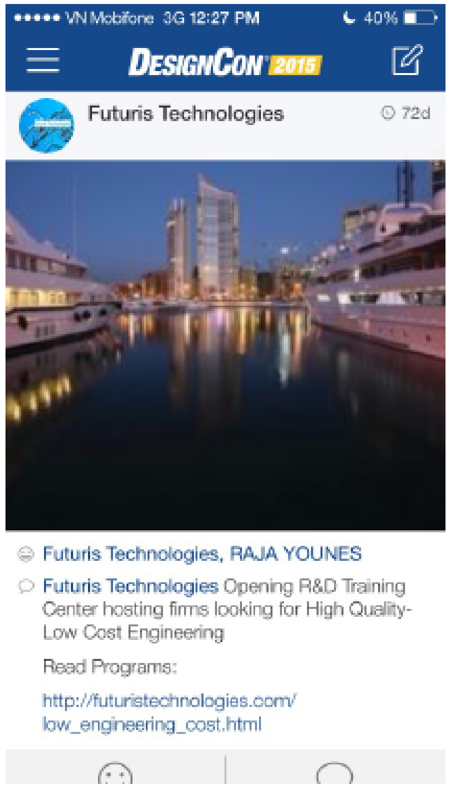
5.3.2. During-event experience

As the event started, activities on the app also started to come to life; people posted their thoughts, interacted with each other through commenting and liking posts. A few features, such as “checking in”, were only available during the event. The below analysis will explore how the app could potentially play out in different aspects of the event experience as shown in the theoretical framework.

a) Sensory

This is the component that is with the objective of creating sensory experiences through sight, sound, touch, taste and smell. For the app, this translates to the app’s graphic design, its ease of use, and the visual elements of users’ posts.

The app’s graphic design is simple and basic. Its colour scheme follows the theme colours of the event, navy blue and orange, which are the same in other visual materials such as website and paper pamphlet. There are two menus on top of the screen, the main one (“hamburger menu”) on the top left (Picture 2) allowing users to select which feature they want to access, another one on the top right corner containing the “Settings” and “Support” function. This arrangement follows basic application design that is easy enough for a user familiar with smartphones manoeuvre and access at least the basic functions. It is also worth reminding that there are significant differences between the user interface of the Android version and iOS version, as with most other apps. Nevertheless, they follow the same design concept and the differences are only to adapt to the system and users expectations as well as behaviours of each system. Hence, this analysis only focuses mostly on the design of the Android version.



Picture 5. Screenshot of the app on an iPhone: no menu on top right corner

The main menu, however, is rather lengthy, with a total of 17 items. Some items are somewhat ambiguous, for example, "User Interfaces" and "Rambus" (Picture 2.), which seem to be sponsored links because when pressed they lead to corporate websites of participating companies. Also, interestingly, one of the most important features of the app, "Map", is placed at the end of the menu. One respondent also commented that he would like to have the customised agenda as an item in the main menu instead of having to go through two layers to access it inside "Full Agenda".

Regarding the app's graphic design, respondents rated it an average of 3.9 on a scale of 1 to 5, with 1 being Very Unsatisfactory and 5 being Very Satisfactory. The app's ease of use also received the same average score of 3.9. The median responses for both questions are both 4, showing that most people did not have a strong opinion about these factors of the app; yet the scores are in the higher end of the scale, which means they have met, although not exceeded, users' expectations.

b) Emotional

Since the app is heavily informational, the emotional appeal, if exists, probably comes mostly from the user generated content. For an attendee, excitement can emerge from looking at the Activity Feed to see the feed constantly changing with new posts talking about sessions and activities happening at the event. The general atmosphere on Activity Feed is positivity, excitement, and enthusiasm. A few post examples are as followed:

> [*Session photo*]: Data rate over 32 GBps. Whoa [*three smiley faces*]
>
> Kick off!
>
> [*Photo with mascot, another attendee, and event's goodie bags*]: Excited to be at DesignCon 2015 @[*another attendee's name*]
>
> [*Photo of DesignCon's logo and theme on the big screen*]: All set for the first keynote.
>
> Very happy to see the signal integrity evangelist Eric bogatin.

c) Functional/Utilitarian

It goes without saying that attendees use DesignCon app first and foremost for its utilitarian benefit, not its aesthetics nor its emotional appeal. The most used function of the app for during event usage is reported to be scheduling, with 80% of responses include this feature; it is then followed by "navigating" with 60%. Networking with other attendees, accessing exhibitor directory, and staying updated with news are roughly used with the same frequency with about 34 – 37% of respondents who answered the question used.

Aside from the scheduling and customised agenda feature discussed earlier, navigating is also an important function that users expect to get from the app. With the nature of DesignCon having several sessions happening at the same time, it was at times difficult to know where one should be for a certain activity. Santa Clara Convention Center, where DesignCon 2015 took place, is a rather complicated multi-level venue, as how venues of this scale are. DesignCon has been held at this place before, so some attendees might have already been familiar with the location, but for first timers it took some time to navigate the venue.

A good map, therefore, is very important to the attendee experience of the event. In this regard, the app has done a poor job in making this aspect of the experience as enjoyable as possible. The venue maps offered on the app are in picture format, which means they are not interactive with users in anyway, and are not able to provide live navigation taking the attendee's location and phone's direction into account. Although in-house navigation using GPS location is a rather advance technology at the moment, and in fact has only been adopted by very few events; many users, who are used to using their phones to navigate from point A to point B in larger distances, still expect to have this function on the app. In fact, one respondent commented that one thing to improve about the app is that it should provide GPS of where a session is in the building. Whether or not it is economically sound to adopt this technology, this mismatch in attendees' value expectation and value perception should be taken into account.

Moreover, the maps offered on the app are more like a floor plan than an effective communication material to help enhance attendees' experience. The pictures are not sharp, have no colours, and location information is not presented in an intuitive way such that it is easy to understand at first glance.

Picture 6. Map of the exhibition floor on the app

d) Relational – Social

The relational aspect is one's relationship with his/her own ideal self, while the social aspect is one's relationship with other people. These two are intertwined because one's ideal self is also how one to perceived by others in the social setting. The app is important in this relational-social element of the event experience because it in itself is a social network, where attendees have the opportunity to sculpt their "ideal self", and connect and interact with each other using this image.

Since DesignCon is a trade event, the social network on the app therefore can also be considered a business setting. Users used real names or professional names on the app instead of nicknames, and if they choose to disclose information about their title and company, it is also most likely to be their real position and workplace. The profile pictures, however, are more relaxed, less business-like, probably due to not wanting to portray a too serious image, or it could also be simply because some people do not always have a business-like portrait available in their phone.

As discussed in 5.1., networking is the fourth most popular objective among DesignCon attendees when coming to the event. The app has a great potential to facilitate attendees networking because it is a flat, non-hierarchical and non-intrusive platform. People can interact with each other by commenting to content of their interest, and post content that they care about; they can also message each other privately through the app. In fact, there is an instance that two employees of the same large company who had never met before noticed they are colleagues when one commented on another's post.

This feature, however, still has not been utilised to its full potential because not many people have adopted it. On average, respondents of the survey only gave the app a score of 3.1 when it comes to how well it helps them in networking. The number of posts is still relatively low compared to the number of attendees, and the amount of people who posted is even much lower. There is an incentive system to motivate attendees to be more active on the app like awarding badges or the leaderboard ranking, but apparently that is not enough of an incentive. The private messaging function is done with an opt-in mechanism, meaning that it is off by default, and attendees have to turn it on if they want to receive messages from others. This opt-in option is also hidden under several layers of clicks, and many attendees with a busy schedule to follow do not have time to explore every corner of the app. Some respondents in the survey likewise commented about this inability to message other people via the app.

In an interview with an attendee who is very active on the app's social network on what his incentive in posting is, he expressed that most of the time he posted just because he was genuinely interested in sharing his information and experience with each other. As at a certain time there were always several sessions happening, he said, it would be beneficial for everyone if people all share what they were experiencing. This is an interesting remark because as opposed to networking, which is interaction with an objective in mind, individuals also have the need just to share with each other, to feel connected. This is the foundation that successful social networks are built on. In fact, there are actually posts in the DesignCon app where users just simply shared tips and information, even unrelated to the professional topic, to help each other adjust their expectation or to have a more pleasurable experience of the event overall:

> People come without bag. Because you can enter quickly. Less screening.
>
> No wifi @ levi's :(
>
> FYI, they have Caramel & Vanilla syrups out in the hall for coffee by halls A/B and C/D (if you have a sweet tooth like me).

e) Information

The informational component of the experience offered by the app is rather obvious. From program information, exhibitor and attendee list, to users' posts, everything can be classified under this component. Still, there are still areas that the app can improve, as pointed out by attendees. In addition to the expectation of an interactive map, several respondents' comments are also about a demand for more information available on the app. One third of people who gave comments and the interviewee mentioned that there should be a summary/abstract of each session on the app. This information is available on the DesignCon website, but since such information is critical for deciding which session one should attend, not having it available within the app in a way defeats the purpose of using the app for scheduling. Additionally, many people also wrote they would like to have the option to download the session presentations directly from the app.

f) Novelty

Compared to traditional sources of information like the paper pamphlet, or even more a more recent one which is the website, the DesignCon app in itself is the manifestation of novelty. Even compared to other trade events in the field of technology, or to DesignCon of earlier years, the app still makes DesignCon 2015 a novel experience because this is the first year a fully developed social network is built within the app. In a traditional trade event, attendees interact with each other only via face-to-face communication, which significantly limits the amount of communication taking place simply due to the lack of time, not to mention other barriers such different schedules and approaching techniques. With an app, attendees just have more options in regard to who they can interact with, how they can approach them, and at what pace their conversation can be.

5.3.3. Post-event experience

While it is possible to get contacts of different people to have further one-on-one discussions post-event, the app is the sole channel of communication if one seeks to communicate to the whole group of attendees after the fair. In the survey, 14% of respondents showed interest in using the app after the event; among the most popular purposes for post-event usage are to network, to access exhibitor directory, and to stay updated with news of the industry.

However, when observing activities on the app after the event, it seems that many who used it during the fair have stopped using it because there were very few posts after DesignCon 2015 ended. Those who did post expressed their gratitude for for the attendees and the organisers. From their profiles, it was deducted that most of them are exhibitors. Thus, while there is potential to build a community that goes beyond the four days of the event, it seems like the organisers have not invested effort in this. In short, the app does not fulfill its potential in post-event experience.

A few months after the trade fair ended, the DesignCon 2015 app was pulled out from the app market and soon to be replaced by DesignCon 2016 app. This means all content generated by attendess of DesignCon 2015 on the app no longer exists.

6. Managerial implications

1. Facilitating communication among attendees should be of more focus

Organisers often focus on communication to attendees and potential attendees as part of the marketing effort, however, another aspect of communication, the one among attendees, is often neglected. It brings direct values to attendees and as a result, the event, as it strengthens networking possibility and enhances the event's brand. An advanced level attendee communication would be to build a community that surrounds but exists independently of the event. People who go to the same trade fair every year have a great deal in common and there is a real need to connect.

2. Event app is the perfect channel for that

An app is the perfect answer for this purpose for three reasons. One, online channel is the best for attendee-attendee communication, for it is interactive, timely and accessible. Two, with the ever growing popularity of smartphones, a native app is the most natural way for mobile users to connect with each other. Three, building an event app is relatively not complicated, there are many companies offering event app packages for just tens of thousand euros.

On a side note, having an app helps attendees connect more easily with the event on social media. The event would naturally have more visibility and campaigns such as hashtag and photo contest would be easier to manage.

Mobile app is also a great channel to build event community. The cost of maintaining and encouraging discussions on the app post-event is not that much because the most expensive part – app developing and implementing – is already done. What organisers need to do is to reserve all users and user-generated content after every update instead of building a new app for each year; and provide more incentives and encouragement for users to keep posting useful information on the app even after the trade fair.

3. Scheduling and navigation are essential features

Scheduling is one of the most basic features of an event app. For large events with more than one session taking place at one time, this feature is a must. Making it easy for attendees to make or edit a plan helps smoothen the event experience from the start, and creates positive moods for attendees coming to the event, knowing what they should expect.

One of the most distintive advantage of app over web is that it is in a mobile phone, which assumably always follows the person. Taking this advantage to build an in-building navigation system for events taking place at large venues would be of great benefit to attendees. With apps like Google Maps being so popular, people expect to be shown direction to their destinations at all time. For trade events that sometimes crowded, it would save a lot of time if one just needs to follow direction on an app to get to a certain session. In-building GPS is not neccessarily easy and cheap to acquire, but it is definitely worth looking in to and considering, especially when technological advances happening all the time.

4. Balancing privacy and communication

One aspect of DesignCon 2015 app that, although may protect some privacy, hinders communication to a great extent, is enabling messaging only by opting in. This opt-out default setting makes many people may have missed messages from people they would like to connect to, simply because they did not know that they had to actively turn it on. This defeats on of the most important advantages of the app that is communication between attendees. Spamming (defined by messaging many people at once, with similar content) can be prevented by several other ways.

5. Select what information to provide

In the case of DesignCon2015, many people had wished for more information about the sessions available on the app. On the other hand, there are menu items that did not need to be there. Having a lean, easy to navigate, but informational and convenient app contributes greatly to the user experience. Therefore, what to put and not to put on the app should be of strategic decisions of the board of organisers.

6. More incentives for using app

DesignCon 2015 in general is a well-functioned app, with many exciting features, but like any other social network, it only really blossoms when the user base is large enough. Apart from the online and on-site app advertisements that had been done, there are more ways to get more users on board and being active. For example, there could have been app-only perks that only app users get to know or be able to claim, such as, checking in at a certain booth or session, posting a status with the most engagement, posting with a hashtag to enter a contest, sharing opinions after a session, etc. The prize could be anything from a small gift to a free pass to next year's event.

On another note, it is also encouraging for users to see that organisers and key note speakers are active on the app and find the fun in it. It is a good idea for organisers to identify themselves and interact with attendees via the app. Not only that it makes it more convincing to use the app, it is an excellent channel of communication between organisers and attendees.

7. Conclusion

7.1. Research summary

This research is inspired by a practical observation that many trade fairs are starting to have their own mobile apps to benefit attendees, which makes the researcher questions what values an app brings to a trade fair, and how organisers can make better use of it. The research taps into two seemingly distinct disciplines namely marketing and communications, utilising theories of experience marketing and within-stakeholder communication.

Using an adjusted model from experiential consumption, it proposes that an attendee's experience of one particular event does not only consist of the pre-, during, and post-event experience, but also value exchange with organiser and interaction with other attendees. Therefore, from the perspective of event organisers, it is in their interest to not only focus on what values they can offer attendees, but also how they can make use of the attendee's value and facilitate meaningful discussions among attendees. Looking from this point of view, thus, a mobile app – being a versatile channel of communication – is one of the best tools to carried out these different flows of communication.

The research studys a case of DesignCon 2015, a trade fair of the high-speed communications and semiconductor industry that takes place annualy in the United States of America. It employs three different methods of data collection, survey questionnaire, observation, and content analysis. It sets out to answer two questions, who the attendees are and what they expect attending this event, and whether the DesignCon 2015 app plays a role in their experience at the trade fair.

Attendees at DesignCon 2015 is a mix of exhibitors and visitors, with slightly different objectives and expectations. From observations, attendees' ages also vary greatly, probably also signifies the different within-firm positions that they hold. However, when it comes to app awareness, a majority of attendees surveyed have knowledge about the app, and the adoption rate is about 50%. The reasons for not using app are categorised into lack of suitable device (i.e. smart phone), lack of time, technical difficulty, and a preference towards the traditional paper brochure. Most people who use the app do agree that it plays a role in their experience at the event, and data from observation helps to understand to what extent that it is a part of attendees' experiences.

Before the event, the app has the ability to fulfill all the needs of attendees regarding pre-event activities, which are imagining, searching, planning and budgeting. During the fair, it also plays a role in every aspect of the experience, including sensory, emotional, functional, social, information and novelty. However, after the fair ended, there has been little to no activity on the app, which means it did not take much of a role in post-event experience.

7.2. Limitations of the study

Two of the biggest limitations of this research are it being a case study and having a small sample. Being a case study, the results are limited to this particular trade fair, and not directly applicable to a wider context. Consequently, the managerial implications only serve as suggestions when considering improving attendee experience at other events. Another issue with this case study is although a lot of consideration has been put into selecting a case to study, time constraint is a prominent factor that makes seemingly better options had to be filtered out. DesignCon 2015 is a suitable option for it is in the ICT industry, and had had its own app for a few years prior. However, the specific industry of high-speed communications and semiconductor is rather intimidating to outsiders, making it a little more difficult to "walk in attendee's shoes" and completely see things from their perspective.

Initially the plan is to survey all attendees via a digital questionnaire (and expected to get at least 200 responses), but since an agreement has not been made with the organisers, the sample size had to be reduced to 92. Having to hand out questionnaires in person also hinders objectivity and quality responses as there is still the presence of the researcher, and many times attendees felt the need to fill out answers quickly as they were on the go. A digital questionnaire would probably allow for more questions since people can finish it in their own time.

7.3. Suggestions for further research

If this research were to be done again, it would be more meaningful to be able to survey a larger sample of attendees. Furthermore, another qualitative method such as in-depth interview or focus group would be beneficial to understanding how important the app is to attendees, as well as how it could be improved. It would also be great if further research be done again with the case of DesignCon to see how the relatively same pool of attendees react differently to the app when people are more open to technology and smartphones become the norm.

It would also be interesting to see the phenomenon from the organisers' perspective. Further research could study why organisers think it is worth investing in an app for their event, what benefits they see in it, and what they expect from it. From the DesignCon 2015 case, it is not really clear what organisers expect to gain from the app, when they seem to neglect a lot of its potentials.

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Appendix

SURVEY QUESTIONNAIRE:

Hello,
This survey is part of my independent research on event mobile application at Aalto University, Finland. It only takes 1 minute to complete, and your cooperation would mean a lot to my research. Thank you.

PLEASE RETURN TO INFORMATION DESK ON 1ST FLOOR

You are attending DesignCon as a:

- ☐ exhibitor
- ☐ visitor
- ☐ speaker
- ☐ Other:...
- ☐ industry analyst
- ☐ researcher
- ☐ media

Your main objective/s in attending DesignCon is/are:

- ☐ to obtain market and industry information
- ☐ to enhance corporate image
- ☐ to look for trading opportunity
- ☐ to gain new ideas
- ☐ to showcase products/prototypes
- ☐ to network with people in the industry
- ☐ to gain knowledge through conferences
- ☐ Other:..

How your objectives have been met so far?

Very unsuccessful ○ ○ ○ ○ ○ Very successful

How would you rate your DesignCon experience so far?

Very unsatisfactory ○ ○ ○ ○ ○ Very satisfactory

Do you know about the DesignCon mobile application?

☐ Yes ☐ No

If yes:

Do you use the DesignCon app?

☐ Yes ☐ No, because..

What have you used / will you use it mostly for?

	Pre-event	During event	Post-event
Navigating	☐	☐	☐
Scheduling	☐	☐	☐
Accessing exhibitor directory	☐	☐	☐
Networking with other attendees	☐	☐	☐
Staying updated with news	☐	☐	☐
Other:	☐	☐	☐

Have you interacted with other attendees within the app?

☐ Yes ☐ No

How do you rate the ease of use of the app?

Very difficult ○ ○ ○ ○ ○ Very easy

How do you rate the graphic design of the app?

Very unsatisfactory ○ ○ ○ ○ ○ Very satisfactory

How do you rate the app's usefulness in facilitating networking and interaction?

Not useful at all ○ ○ ○ ○ ○ Very useful

The app constitutes a large part of your experience at DesignCon

Strongly disagree ○ ○ ○ ○ ○ Strongly agree

Is there any feature you wish to add to or improve about the app?

____

____